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Re:

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

FAX COVERSHEET

Attorney agreed to this claim set on 4/25/05

KMV

To: James Bell

Phone: 512-867-8407

FAX: 512-867-8470

From: K. Thangavelu

Patent Examiner

USPTO

Phone: 571-272-3717

FAX: 571-273-5717

Remarks:

As discussed during the telephone conversation on April 22, 05, the claims in Application 09/768,083 have been amended as shown in the following pages. Please let me know if you have any coments or suggestions.

Your docket no. 16356.749(DC-02622)

1. A <u>computer implemented</u> method for calculating electromagnetic radiation in a computer system, comprising:

determining the distance of a central processing unit from a heat sink;

determining a number of fins and a number of bars of the heat sink;

determining the heat sink fin geometry;

determining if the capacitive coupling exists between the heat sink and the central processing unit for adjusting the fin size;

determining if inductive coupling exists between the heat sink and the central processing unit for adjusting the number of fins and a number of bars;

determining the current density across the heat sink for adjusting the fin geometry;

determining current loop length defined by a current path over a surface of the heat sink and adjusting the current loop length by adjusting one or more of the number of fins, the number of bars and the fin geometry;

modeling characteristic radiation from the central processing unit as a modulated Gaussian pulse; and

estimating the electromagnetic field produced by the central processing unit using finite differences in time domain (FDTD) to solve Maxwell's equation.

3. The method as recited in claim 1, further comprising:

reducing radiation noise by reducing capacitive coupling between the heat sink and the central processing unit.

5. The method as recited in claim 1 , further comprising:

reducing radiation noise by reducing inductive coupling between the heat sink and the central processing unit.

6. A computer implemented method of designing a heat sink for a computer system, comprising:

determining the distance of a central processing unit from a heat sink;

determining a number of fins and a number of bars of the heat sink;

determining the heat sink fin geometry;

determining if the capacitive coupling exists between the heat sink and the central processing unit for adjusting the fin size;

determining if inductive coupling exists between the heat sink and the central processing unit for adjusting the number of fins and a number of bars;

determining the current density across the heat sink for adjusting the fin geometry;

determining current loop length defined by a current path over a surface of the heat sink and adjusting the current loop length by adjusting one or more of the number of fins, the number of bars and the fin geometry;

modeling the characteristic radiation from the central processing unit as a modulated Gaussian pulse;

estimating the electromagnetic fields produced by the central processing unit using finite differences in the time domain (FDTD) to solve Maxwell's equation;

using a fast Fourier transform to translate time domain data to frequency domain;

reducing radiation noise by reducing capacitive coupling between the heat sink and the central processing unit;

reducing radiation noise by reducing inductive coupling between the heat sink and the central processing unit; and

designing the heat sink with adjusted number of fins, number of bars and fin geometry.

7. (Cancelled)

8. (Cancelled)

10. A computer program product in a computer readable medium, comprising computer executable instructions, which when executed by a computer perform a process for designing a heat sink for a computer system, the said process comprising:

determining the distance of a central processing unit from a heat sink;

determining a number of fins and a number of bars of the heat sink;

determining the heat sink fin geometry;

determining if the capacitive coupling exists between the heat sink and the central processing unit for adjusting the fin size;

determining if inductive coupling exists between the heat sink and the central processing unit for adjusting the number of fins and a number of bars;

determining the current density across the heat sink for adjusting the fin geometry;

determining current loop length defined by a current path over a surface of the heat sink and adjusting the current loop length by adjusting one or more of the number of fins, the number of bars and the fin geometry;

modeling characteristic radiation from the central processing unit as modulated Gaussian pulse;

estimating the electromagnetic field-produced by the central processing unit using finite differences in a time domain (FDTD) to solve Maxwell's equation;

<u>using a fast Fourier transform to translate time domain data to frequency domain</u>;

reducing radiation noise by reducing capacitive coupling between the heat sink and the central processing unit;

reducing radiation noise by reducing inductive coupling between the heat sink and the central processing unit; <u>and</u>

<u>designing the heat sink with adjusted number of fins, number of bars and fin geometry</u>.

11. (Cancelled).

16. <u>A computer apparatus for designing a heat sink for</u> a computer system, <u>wherein said computer system comprises:</u>

a central processing unit,

a heat sink coupled to the central processing unit, the heat sink having fins and bars, <u>said apparatus comprising:</u>

<u>a processor unit for executing stored computer programs;</u>

<u>a memory unit for storing computer programs to be executed by the processor unit;</u>

<u>a computer program stored in the memory unit, comprising computer instructions, which when executed by the processor unit perform a process for designing a heat sink for said computer system, the said process comprising:</u>

determining the distance of a central processing unit from a heat sink;

determining a number of fins and a number of bars of the heat sink;

determining the heat sink fin geometry;

determining if the capacitive coupling exists between the heat sink and the central processing unit for adjusting the fin size;

determining if inductive coupling exists between the heat sink and the central processing unit for adjusting the number of fins and a number of bars;

determining the current density across the heat sink for adjusting the fin geometry;

determining current loop length defined by a current path over a surface of the heat sink and adjusting the current loop length by adjusting one or more of the number of fins, the number of bars and the fin geometry;

modeling characteristic radiation from the central processing unit as a modulated Gaussian pulse;

estimating the electromagnetic fields produced by the central processing unit using finite differences in a time domain <u>(FDTD)</u> to solve Maxwell's equation;

<u>using a fast Fourier transform to translate time domain data to frequency domain;</u>

<u>reducing radiation noise by reducing capacitive coupling between the heat sink and the central processing unit;</u>

<u>reducing radiation noise by reducing inductive coupling between the heat sink and the central processing unit; and</u>

designing the heat sink with adjusted number of fins, number of bars and fin geometry.

17. (Cancelled).

18. (Cancelled).

19. (Cancelled).

20. (Cancelled).